

## TORSIONAL VIBRATION DAMPER

### Abstract

A torsional vibration damper mountable to a rotatable shaft. The torsional vibration damper is a composite structure including a body formed of a polymer, such as a glass-reinforced polyamide, that surrounds an insert formed of a structurally-rigid material, such as a metal. The insert includes one or more support flanges that extend radially outward into the polymer body. When the torsional vibration damper is removed from the rotatable shaft, axial forces applied to the damper are transferred by the support flanges to the insert such that the polymer body remains substantially stress-free. In addition to, or instead of, the support flanges, the insert may include torque-locking structure that locks the polymer annular body with the insert to prevent relative rotation therebetween.